## REMARKS/ARGUMENTS

1. In the Final Office Action dated December 28, 2009, the Examiner rejected claims 1, 3-7, 9, 10, 12, 15, 22, 23, 25, 26, 28, 31, 34, 35 and 38 under 35 U.S.C. §103(a) as being unpatentable over Chua (U.S. Patent Publication 2004/0183833) in view of Davidson (U.S. Patent No. 5,627,567) and Vargas (U.S. Patent No. 5,748,512). Claims 8, 11, 24 and 27 were rejected under 35 U.S.C. §103(a) as being unpatentable over Chua, Davidson, and Vargas in further view of Moon et al. (U.S. Patent No. 6,259,436). Claims 36 and 37 were rejected under 35 U.S.C. §103(a) as being unpatentable over Chua, Davidson, and Vargas in further view of Robinson et al. (U.S. Patent No. 6,801,190). These rejections are traversed and reconsideration is hereby respectfully requested.

2. The Examiner rejected claims 1, 3-7, 9, 10, 12, 15, 22, 23, 25, 26, 28, 31, 34 and 35 under 35 U.S.C. §103(a) as being unpatentable over Chua in view of Davidson and Vargas.

Applicant submits that the Chua, Davidson, and Vargas references, taken alone or in combination, fail to teach or suggest each and every element of recited in independent claim 1.

In rebutting the argument submitted in the response to the previous Office Action dated September 8, 2009, the Examiner asserts that "Chua has shown through his drawings and disclosure associating areas with characters that can represent more than one character." Applicant respectfully disagrees.

THE CHUA REFERENCE

Chua discloses:

> In this embodiment, touching a key 22 on the virtual keyboard 20 is not simply taken as a selection of that key. There may have been a mistake owing to parallax error and/or inaccurate aim. Instead, the driver circuit 36 uses the **selected position relative to the representative positions of**

> **the keys to determine possible candidates (candidate keys) for the desired symbol.** It also uses the **offset between the selected position and the representative positions of the candidate keys and predictive word input technology to derive a list of candidate words**. The word choices made available are taken from those that exist in the database dictionary, based upon the letters that have already been input in the current word string and how frequently the potential words are used. This is displayed and the user selects one of them if and as desired. [Paragraph 0023, emphasis added]
>
> FIG. 3 is a close up of an area of the virtual keyboard 20. This area is roughly centered on the letter keys for "t", "y", "g" and "h", each with its own representative position 50t, 50y, 50g, 50h. Assuming the user touches the screen 12 at the point 52, marked with an X, he may, indeed, have wanted to select the letter "h", as the selected position 52 falls within the display area 54h for that letter. On the other hand, he may have been aiming at the "t", "y" or "g" key and missed. After all, the selected position 52 is only just on the "h" key and, due to the staggered alignment of the rows of keys, is actually closer to the centre of the "y" key than to the centre of the "h" key. It is also not much further away from the centers of the "t" and "g" keys. [Paragraph 0024]

Thus, Chua teaches detecting a touch at a selected position and based on the distance between the selected position and the representative positions, i.e., centers, of individual virtual keys, deciding a set of candidate keys from which to derive candidate words. Chua therefore does not teach associating areas of a touch interface of a mobile electronic device with characters, wherein at least some of the associated areas **overlap with one another** to form intermediate regions that represent more than one character, as set forth in independent claim 1. Figure 3 of Chua clearly shows that the areas associated with the characters "t," "y," "g" and "h" are mutually exclusive and do not overlap. Each area is shown associated with only one character. No intermediate regions are shown or described as being formed. Chu makes no mention that the areas associated with the characters "t," "y," "g" and "h" overlap one another.

The Final Office Action states, "Chua does not explain in detail that intermediate regions are formed, therefore Davidson has been provided to show that the functionality of overlapping regions (Figure 9a) to form an intermediate region

was known. Therefore the known functionality of an intermediate region can be incorporated with the Chua functionality. Hence the functionality is provided, how the system addresses the selection may differ but does not take away from the fact that the functionality exists". Applicant respectfully disagrees.

THE DAVIDSON REFERENCE

Davidson discloses:

> In accordance with one illustrative embodiment of the invention, expanded touch zones for each active control key are defined, **the expanded touch zone for each active control key having an area that is larger than the corresponding display area for the control key**. The dimensions and shape of the expanded touch zone defined for each active control key are defined adaptively depending upon the existence and location of other active control keys on the user interface panel. Thus, **the dimensions and shape of each expanded touch zone are automatically altered to avoid overlapping with other expanded touch zones** when other active controls keys are located nearby on the interface panel. When the user touches the interface panel, a determination is made as to whether an expanded touch zone for any active control key has been touched and if it has, the active control function indicated by the active control key corresponding to the expanded touch zone touched by the user is selected. If an expanded touch zone for any active control key has not been touched, an indication is provided that no active control function has been selected. [Col. 2, lines 13-32, emphasis added]
>
> In one embodiment of the adaptive touch recognition system of the present invention, **dead zones are established between the expanded touch zones of adjacent active control keys**. As shown in FIG. 3(b), the distance x by which the boundaries of expanded touch zones 20 and 22 are respectively spaced from control key display areas 16 and 18 is selected so that the expanded touch zones 20 and 22 are spaced from each other by a predetermined distance d. The space between the expanded touch zones 20 and 22 defines a dead zone 24 between control keys 17 and 19. **A dead zone is defined as an area that, when touched by the user will not select any active control key**. The purpose of the dead zone is to prevent the existence of areas on the display panel wherein the determination of the selected control key varies based upon a change in touch location of only a few pixels. When dead zones are established between the expanded touch zones of adjacent control keys, the areas of the expanded touch zones for these control keys are not maximized. However, it has been determined that

> any disadvantage suffered by failing to recognize some touches that might fall within larger expanded touch zones for adjacent control keys is outweighed by avoiding miss hits that might occur whereby a control key other than the one intended by the user is selected when the user touches a location near a boundary between the expanded touch zones of two adjacent active control keys. [Col. 5, lines 23-48, emphasis added]
>
> It should be further understood that although dead zones are defined between the expanded touch zones of adjacent active control keys in one embodiment of the invention, the adaptive touch recognition system of the present invention can also be practiced without defining dead zones between expanded touch zones. When dead zones are not defined between expanded touch zones, the predetermined distance d (shown in FIG. 3(b)) by which the expanded touch zones of adjacent active control keys are spaced is set to zero. As a result, the **expanded touch zones of adjacent active control keys abut one another but do not overlap**. [Col. 6, lines 1-10, emphasis added)
>
> FIG. 9(b) illustrates a dead zone 536 that is formed between control keys 520 and 524; FIG. 9(c) illustrates a dead zone 534 that is formed between control keys 522 and 524; and FIG. 9(d) illustrates a dead zone 532 formed between the control keys 520 and 522. [Col. 18, lines 15-19]
>
> As can be seen from FIG. 9(b), if control keys 520 and 524 are the only two considered, touch location 540 appears to fall within the expanded touch zone of control key 520 because it is closer to control key 520 by more than the dead zone size. However, as shown in FIG. 9(e), when each of the three control keys are considered, **touch location 540 falls within a dead zone between control keys 522 and 524 and therefore, does not select any active control key**." [Col. 18, lines 58-65, emphasis added]

Thus, Davidson teaches **non-overlapping** extended touch zones for adjacent keys with dead zones between the extended touch zones. When a touch location falls within a dead zone, nothing is selected. Although FIG. 9a shows overlapping extended touch zones, Davidson does not teach or suggest how to resolve a touch in overlapping extended touch zones, but rather Davidson resolves the problem by teaching shortening the extended touch zones such that they do not overlap, and creates dead zones between the extended touch zones that result in no action when touched, as shown in FIG. 9b. Davidson teaches away from the features of independent claim 1 because the extended touch

zones do not represent more than one letter and do not overlap one another. Rather, each active key 520, 522, 524 has an extended touch zone 542, 544, 546. The extended touch zones 542, 544, 546 are separated by dead zones 532, 534, 536. The extended touch zones 542, 544, 546 disclosed in Davidson cannot represent more than one active control key. Furthermore, the dead zones 532, 534, 536 cannot be considered to show the functionality of intermediate regions as set forth in independent claim 1 as they have an entirely different function. The function of the dead zones 532, 534, 536 of Davidson is to prevent the selection of any active control key area. In contrast, the intermediate regions defined in independent claim 1 of the present application have characters associated therewith so that when a touch is located in an intermediate region, the characters whose centers are nearest to the center of a first character are identified.

Davidson therefore does not teach or suggest **associating areas of a touch interface of a mobile electronic device with characters, wherein at least some of the associated areas overlap with one another to form intermediate regions that represent more than one character**, as set forth in independent claim 1.

The Final Office Action states, "Vargas' algorithm for selecting the three proximate keys has the effect of associating the letters in the middle row (S, D, F, G, H, J & K) to an area of the touch screen that is bounded by the centers of adjacent keys as described in [0050] of the present invention". The Examiner has also superimposed Figure 8B of the present application onto Figure 1 of the Vargas reference and referred to paragraph [0050] of the present application to show that the Vargas algorithm has the same association as described in paragraph [0050] of the present application. The MPEP does not permit use of the drawing in the Final Office Action as a reference against the claims of the present application. Further, this drawing is clearly an impermissible application

of hindsight given that part of the drawing contains elements from the present application and ***not*** from the reference nor described in the reference. The Examiner must utilize only the teachings of the reference for an art rejection, and may not combine such a reference with teachings from the present application to support such a rejection. Further, Applicant respectfully submits that this speculation stated in the Final Office Action misconstrues the teachings of the Vargas reference.

THE VARGAS REFERENCE

Vargas discloses:

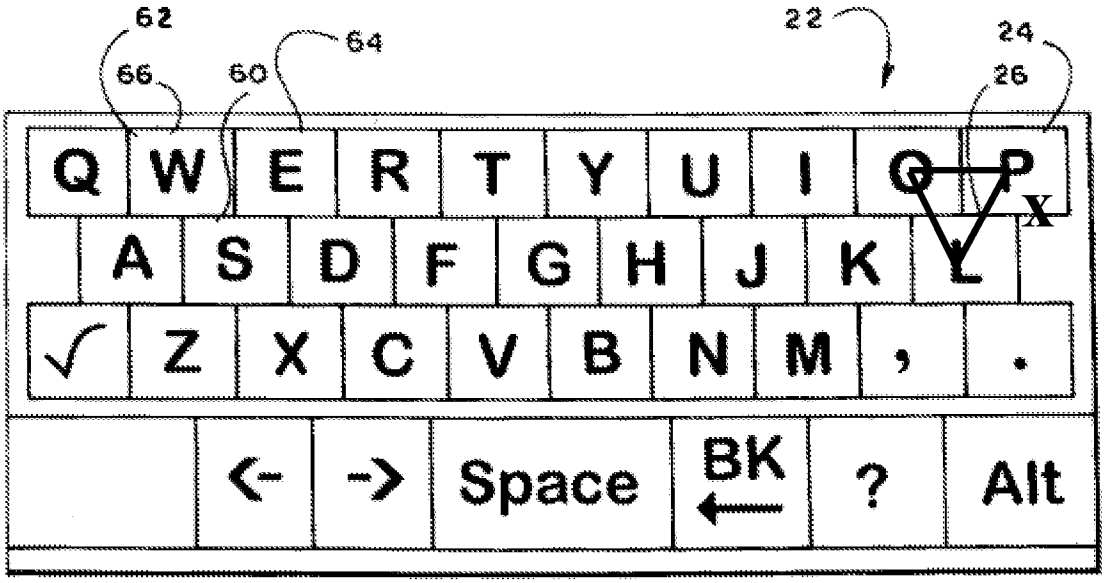
> If the contact point on a key is displaced from the center point of the key struck more than 0.2 times the key width, the system and method of the present invention undertake a calculation to determine which character the user intended to enter. The method of the present invention begins by **determining which two keys adjacent to the struck key have their center points closest to the contact point.** While more or less than two adjacent keys could be determined in connection with the present invention, two additional keys with center points nearest the contact point appear to provide good character selection results. The two additional keys with center points nearest the contact point and the key actually struck are defined as the proximate keys. [Col. 5, lines 51-54, emphasis added]
>
> In FIG. 2 for example, keys "S", "W", and "E" each have center points 60, 62, and 64 respectively. If a user touches the keyboard 22 at a contact point 66 in the upper part of the "S" key and if the contact point 66 is more that 0.2 of the width of the key from the center point 60 of the "S" key, the method of the present invention is called upon to select a character for entry. The method **calculates the distances from the contact point 66 to the center points of all of the keys adjacent to the "S" key and selects the two keys, keys** "W" and "E" for example**, with the nearest center points 62 and 64**. [Col. 5, lines 55-65, emphasis added]
>
> After the method of the present invention has selected the proximate keys "S", "W", and "E", the method then tests to determine which character represented by those three proximate keys is the most likely candidate to be entered. As previously stated, the likelihood of a character being selected and entered **depends on the frequency with which the character might appear in the text based on previously entered characters** and **on the distance between the contact point and the center point of each of**

> **the proximate keys**. [Col. 5, line 66 through Col. 6, line 7, emphasis added]

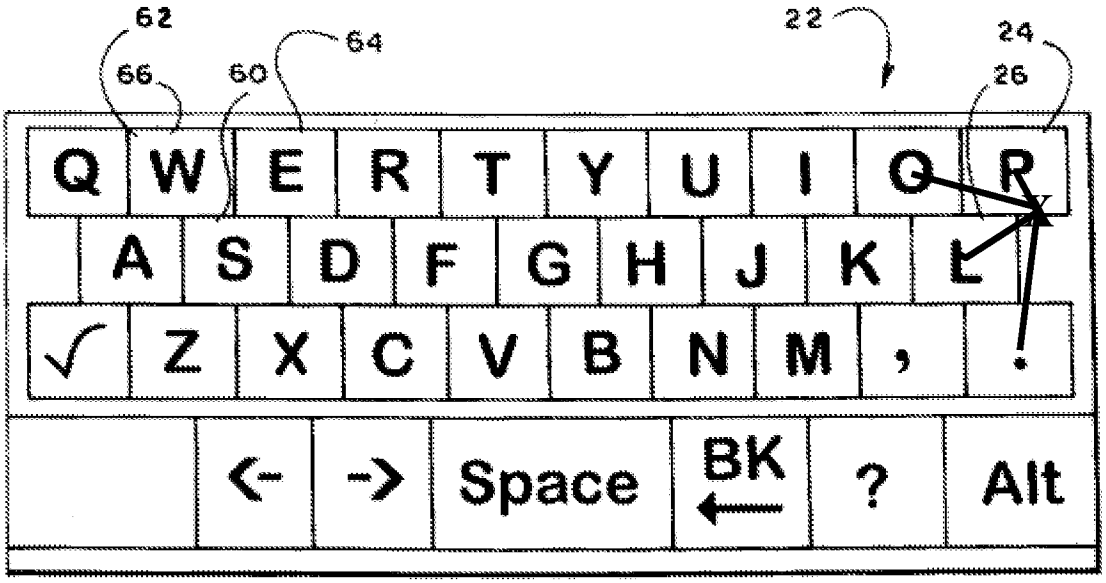
Thus, Vargas determines which two keys adjacent to a struck key have their **center points closest to the contact point** by calculating distances from the contact point to the center points of all the keys adjacent to the struck key. Vargas selects the most likely candidate for entry based on the **distance** between the contact point and the center points of each of these keys and the **frequency** with which the character might appear in text based on previously entered characters.

Vargas therefore does not teach **for a first character, the associating comprises associating an area of the touch interface with the first character by joining the centers of characters nearest to the first character,**" as set forth in independent claim 1. Instead, Vargas teaches **calculating distances from the contact point to the center points** of all the keys adjacent to the struck key and passing the two keys adjacent to a struck key and the struck key to a predictive text engine to determine which character was selected. Vargas algorithm works in an entirely different manner than the method set forth in independent claim 1.

The following example illustrates the differences between Vargas algorithm and the method recited in independent claim 1. In the present application, when the touch location (denoted by "x" ) is positioned in the area associated with the letter "P" marked in the QWERTY keyboard shown via the example of Figure 1 of Vargas (reproduced below), and the centers of the letters "P," "O" and "L" are shown joined in the triangle. The character "P" is identified because the touch location is not within the overlapping area defined by the characters "P,", "O", and "L."




In contrast, when the touch location (denoted by "x") is positioned at the same point as the above example in the area associated with the letter "P" marked in the QWERTY keyboard shown in Figure 1 of Vargas (reproduced below), because the touch location is more than 0.2 of the width of the key from the center point of the "P" key, the distance from the touch location to the nearest characters, "P," "O," "L" and "." is calculated (see below) by Vargas. Vargas' algorithm selects the most likely candidate for entry based on the distance between the touch location and the center points of each of the keys "P," "O," "L" and "." and the frequency with which the character might appear in text based on previously entered characters.




Based on the foregoing, Vargas' algorithm clearly works in a fundamentally different manner than the method recited in independent claim 1.

Applicant has therefore shown that none of the cited references, alone or in combination, teach **associating areas of a touch interface of a mobile electronic device with characters wherein at least some of the associated areas overlap with one another to form intermediate regions that represent more than one character** and **wherein for at least one particular character, the associating comprises associating an area of the touch interface with the particular character by joining the centers of characters nearest to the particular character**, as set forth in independent claim 1. Thus, the Chua, Davidson and Vargas references, taken alone or in combination, fail to teach or suggest each and every element of independent claim 1.

The Chua, Davidson and Vargas references, taken alone or in combination, also fail to teach or suggest each and every element of independent claims 6, 22, 34,

and 38 for the reasons set forth above for independent claim 1. Applicant respectfully submits that the Office Action has failed to establish a *prima facie* case of obviousness because the Chua, Davidson, and Vargas references, taken alone or in combination, do not teach or suggest all of the elements of the independent claims 1, 6, 22, 34, and 38.

The rejections fail to provide the teachings necessary to fill the gaps between these references in order to yield the invention as claimed. The rejections take items out of context and combine them without motivation, in effect producing the words of the claims (and sometimes, not even the words or concepts of the claims), without their meaning or context.

One of skill in the art would not be motivated to make such a combination. Even if a person of ordinary skill in the art attempted to combine the references, the skilled person would not be led to the claimed invention in any predictable manner. Instead, the skilled person would be led to a touch interface for an electronic device that includes areas that are associated with characters where the areas of the characters do not overlap and dead zones are formed between the areas. Furthermore, a character would be selected based on the distances from the contact point to the center points of all the areas adjacent to the struck area and the frequency with which the character might appear in text based on previously entered characters. Therefore, the present invention is not obvious in light of any combination of Chua, Davidson, and/or Vargas.

Applicant therefore submits that independent claim 1 is not obvious in view of the combined teachings of Chua, Davidson and Vargas.

Independent claims 6, 22, 34, and 38 include corresponding subject-matter to independent claim 1. Thus, independent claims 6, 22, 34, and 38 are not obvious in view of the combined teachings of Chua, Davidson and Vargas for at

least the same reasons that independent claim 1 is not obvious in view of the combined teachings of these references.

Regarding dependent claims 3, 4, 5, 7, 9, 10, 12, 15, 22, 23, 25, 26, 28, 31, and 35, Applicant submits that these dependent claims include at least all of the limitations of one of independent claims 1, 6, 22, and 34 and accordingly, these claims are not obvious in view of the combined teachings of Chua, Davidson, and Vargas for at least the same reasons that claims 1, 6, 22 and 34 are not obvious in view of the combined teachings of these references.

3. The Examiner has rejected claims 8, 11, 24, and 27 as being unpatentable over Chua, Davidson, and Vargas in further view of Moon.

As shown above, Chua, Davidson, and Vargas fail to teach all of the limitations of independent claims 1, 6, and 22. Moon fails to cure the deficiencies of Chua, Davidson, and Vargas. In particular, Moon fails to teach or suggest the features of "a microprocessor for associating areas of the one or more touch interfaces with the characters, wherein at least some of the areas overlap with one another to form intermediate regions that represent more than one character and identifying which characters are associated with the areas of the one or more touch interfaces that include a location of the touch" and "wherein for a first character, an area of the one or more touch interfaces associated with the first character is bounded by joining the centers of characters nearest to the first character" as set forth in independent claim 6. Accordingly, claims 8 and 11 cannot be regarded as being obvious in view of the combined teachings of Chua, Davidson, Vargas, and Moon.

Furthermore, Moon fails to teach or suggest the features of "a microprocessor configured to associate areas of the one or more touch interfaces with the characters wherein at least some of the associated areas overlap with one

another to form intermediate regions that represent more than one character, and the microprocessor is further configured to identify which characters are associated with the areas of the one or more touch interfaces that includes a location of the touch" and "wherein for a first character, an area of the one or more touch interfaces associated with the character is bounded by joining the centers of characters nearest to the character" as set forth in independent claim 22. Accordingly, claims 24 and 27 cannot be regarded as being obvious in view of the combined teachings of Chua, Davidson, Vargas, and Moon.

4. The Examiner rejected claims 36 and 37 under 35 U.S.C. §103(a) as being unpatentable over Chua, Davidson, and Vargas in further view of Robinson.

For the reasons set forth above, Chua, Davidson, and Vargas fail to teach of the limitations of independent claim 34. Robinson fails to cure the deficiencies of Chua, Davidson, and Vargas. In particular, Robinson fails to teach or suggest recited in claim 34 "associating areas of a touch interface of a mobile electronic device with characters, wherein at least some of the associated areas overlap with one another to form intermediate regions that represent more than one character" and "wherein for a first character, the associating comprises associating an area of the touch interface with the first character by joining the centers of characters nearest to the first character" as set forth in independent claim 34. Accordingly, claims 36 and 37 cannot be regarded as being obvious in view of the combined teachings of Chua, Davidson, Vargas, and Robinson.

5. The Examiner is invited to contact the undersigned by telephone or facsimile if the Examiner believes that such a communication may advance the prosecution of the present application.

Notice of allowance of claims 1, 3-12, 15, 22-28, 31, and 34-38 is hereby respectfully requested.

The Commissioner is hereby authorized to charge any additional fees, and credit any over payments to Deposit Account No. 501593, in the name of Borden Ladner Gervais LLP.

Respectfully submitted,
GRIFFIN, Jason, T.

By: /Geoffrey deKleine/

**Geoffrey deKleine**
**Reg. No. 50,216**
Borden Ladner Gervais LLP
1200 Waterfront Center
200 Burrard, P.O. Box 48600
Vancouver, BC V7X 1T2
CANADA
Tel: (604) 640-4227
Fax: (778) 329-0752
E-mail: ipmailvancouver@blgcanada.com

GDK/